1. Describe the practice proposed for recognition, and list its objectives. Detail how the practice is innovative, how it promotes high student achievement and how it can be replicated.

The practice proposed for recognition is the **Integrated Science and Technology in the Marketplace** program of the Science and Technology Magnet School. The program is an Educational Support component of the curriculum. It provides enrichment, raised self-expectations, and the opportunity for appropriate challenges for exceptionally able students, by combining business and industry with language arts, mathematics, social studies, science, technology and computer arts. The focus is on cross-content workplace readiness, encouraging students to take intellectual risks in an environment, which encourages intellectual exploration, creative thinking and an open exchange of ideas, with the continuing vision of preparing students for the workplace.

Objectives:

- To prepare students for careers in the workplace
- To develop independent work habits
- To develop the skills of working and interacting together
- To write in a variety of ways depending on the audience and purpose
- To speak in a variety of ways depending on the purpose

Innovations:

The Integrated Science and Technology in the Marketplace program in this upper elementary Science and Technology Magnet School is composed of eight semesters, encompassing a period of four years over grades three, four, five and six. Each semester course focuses on a different component that relates to a variety of students' interests and talents. This interdisciplinary approach is compartmentalized drawing in language arts, mathematics, science, social studies, technology and computer arts through a collaborative effort of three specialists in the areas of science, technology and computers respectively.

Specific Topics include:

Architecture	Health and Medicine
The Development of Transportation	Communication
Space and Rocketry	Ecology
Law and Everyday Life	The World at Work

Promotes High Student Achievement

The underlying foundation of the program is to incorporate an enriched curriculum that develops analytical thinking skills, while exposing and preparing students for the workplace. The students are exposed to a variety of situations that develop critical thinking in a low stress environment. The component of problem solving and the definition of solutions is key to every component of the program.

Integrated Science and Technology in the Marketplace.

The students develop an awareness of the relationship between culture, climate, resources, geography and government; a sense of varied world resources, climates, political systems and the impact on business; an understanding of how science and technology has contributed to communication, the ecological phenomenon, health and medicine; the interconnectedness of world peoples due to the impact of the development of transportation and communication through science and technology; and how the people of the workplace interact and depend on each other.

The students in this program accept the challenge and are held accountable by signing a contract specifying their responsibilities. It states the student's obligation to keep current with the assignments and maintain Honor Roll status in his or her other classes. In addition to Honor Roll status, each child is obligated to maintain an 85% consistent average in the Gifted and Talented Program. Each child is placed in the program for an initial trial period of three weeks. The students are also challenged through competition and team collaboration. The students are encouraged to support each other in collaborative problem solving. The obligation and commitment to the program is not to be taken lightly.

How it can be replicated:

The program can be replicated with the assistance of the program teachers. All of the materials are readily available for duplication or are available commercially for a modest cost. The desire and commitment of the staff to incorporate this component into the curriculum is the key requirement for replication.

2. Describe the educational need of the students that the practice addresses and how they were identified. List and describe the Core Curriculum and /or Cross Content Workplace Readiness Standards that the practice addressees.

The exceptionally able students are selected through a multi-criteria skill evaluation and interviewed for the program by the program directors and the building principal. The students are nominated by their classroom teachers or parents, show outstanding academic performance, and display varied learner characteristics of a highly able student. The composite of the whole child is taken into account including motivation and desire to be in the program.

As part of the objectives for the Core Curriculum Content Standards, the objectives as set forth in the Cross Content Workplace Readiness Standards are followed.

Core Curriculum Standards Addressed:
All of the core curriculum for Workplace Readiness Standards are addressed. In total the program includes experiences that

- develop career planning in a variety of areas (1.1,.2,.3,.5,.7,.8,.12)
- promote the use of technology, information and other tools used in research (1.1,.2,.3,.5,.6,.10) (2.5,.6,.7,.8,.9,.10)
- promote and develop critical thinking, decision making and problem solving skills (3.1,.3,.4,.5,.6,.9,.11,.12,.13,.14,.15)
- develop self management skills (4.1,.2,.3,.4,.5,.6,.7,.9,.10,.11)
- promote and develop the application of safety principles. (5.1,.3,.4,.5,.6,.8)

In the specific areas of the Cross-Curriculum are addressed as follows and are indicated numerically and in parentheses.

Law and Everyday Life: Students will learn democratic citizenship and how to participate in the constitutional system of government of the United States. The curriculum in Law involves critical thinking applied to writing case scenarios and defending one's own views not only through in class discussions but through **Crime Scene™** and **Science Court™.** They have the opportunity to research and build a legal structure. (L.A. 3.1,.3,) (S.S. 6.1,..2,..3,..4,.5) (Math 4.11) (Science 5.12)
The World at Work: The student gains a geographical understanding of the distribution and availability of natural resources by looking at the globe thought the eyes of a scientist. They then have the opportunity to design and build clocks to sell for profit and further increase their understanding of the the business world by playing the **Stock Market Game™** and visiting the New York Stock Exchange and the Commodity Exchange. The concepts of global interaction and awareness are developed. The student increases the understanding of the business world brings mathematics into the marketplace. (L.A.3.1,.3) (S.S...6,.9) (Math 4.11) (Science 5.12)
Development of Communication: Emphasis is on the scientific understanding of light and sound waves, musical tones and sounds, and the building of simple instruments to transmit sound in addition to the dissection of equipment used in communication. Ultimately the students apply their speaking, writing and communication skills to the production of an in-house radio station, WHST. (L.A.. 3.1,.3) (S.S.6.4) (Science 5.3) (Math 4.3) (Visual & Performing Arts 1.6)
Architecture: The student becomes aware of the diverse career segments that go into the making of a structure and studies the technological, geometric, ecological, cultural and scientific aspects of structural design that are a part of it. The model is nature's architects such as the bee's nest and the ant's colony. The scientific study of materials is included as well as the building of animal and human structures. (L.A. 3.1,.3) (S.S. 6.4) (Science 5.1,.2,.4,.5) (Math 4.6,.8)
Development of Transportation: The goal is to trace the development of transportation from the invention of the wheel to rocketry and discuss man's ability to move by the invention of mechanical devices, and incorporate a variety of aspects of man's continual search for faster movement taking into account the study of combustion, motion, friction and force. They build gliders and discuss the theory of flight using hand-on materials. (L.A.3.1,2,3,4,5) (S.S. 6.7,8) (Science 5.9) (Math 4.3)
Health and Medicine: The students become familiar with health related professions while at the same time discovering the various components of good health and the medical community's commitment to keeping people disease free. The students study microbial environments, pollution, nutrition and hygiene, build a medical or health related tool of their choice such as a wheel chair, and visit a health-related company. (L.A 3.1,.2,.3,.4,.5) (S.S 6.9) (Science 5.6) (Math 4.1,.3)
Ecology: The student will be exposed to various professions in the area of ecology. A variety of aspects of survival will be included in this program from the point of view of the creatures nesting in an ever-populated world to man's quest for more structure and creature comfort. The student will study correlated topics including recycling, habitats, water cycle
Acid Rain™ (Nation Geographic Kids' Network), and global warming. They will have an opportunity to build a biodome and create a solar panel vehicle. (L.A. 3.1,.2,.3,.4,.5) (S.S. 6.9) (Science 5.1,.6,.10,.12) (Math 4.1,.3)
Space and Rocketry: This portion of the program deals with skills in the area of space and exploration. The student will trace the development of flight through the Internet drawing in a variety of resources. The students will build a rocket, while studying the basic concepts of space such as the planets, gravity, navigation, and weather. They will visit a planetarium to further enrich their understanding or the interconnectedness of scientific research as it related to space travel. (L.A. 3.1,.2,.3,.4,.5) (S.S. 6.4) (Science 5.9,.10) (Math 4.1,.3,.14)

3. Document the assessment measures used to determine the extent to which the objectives of the practice have been met.

The assessment measurers of the practice are outlined in the following items:

The preparation of students for careers in the workplace and the students' exposure to and participation in career oriented semester activities over a four year period:

Architecture, Building and Engineering as evident in:	Architecture
The Health Industry as evident in:	Health and Medicine
Engineering and Geography as evident in:	Development of Transportation
Communication and Telecommunication as evident in:	Development of Communication
Space Exploration as evident in:	Space and Rocketry
Science and the Environment as evident in:	Ecology
Law as evident in:	Law and Everyday Life
Resources, Manufacturing and Business as evident in:	The World at Work and the Stock Market

The development of independent work habits

Project completion dates are respected
Classwork assignments are completed
Honor roll status is maintained
Contract agreement is respected

The development of the challenge of working and interacting together

Observation of students working together to solve investment strategies, writing a case, making an item of communication, staging a mock trial, building models, creating a radio station production, discussing environmental issues, and participating in group activities that require a collaborative effort for experimentation and analysis.

Writing for a variety of purpose depending on the audience and purpose

In Law and Everyday Life the student has written an individual factual case, and as a collaborative effort, has written a group case that was submitted to the NJ Bar Foundation's Annual Law Fair

In Health and Medicine the students have written mini lab reports on their science experiments

In The World at Work the student have written a financial analysis and have submitted a collective essay to the Economic Council outlining the merits of studying the stock market.

In Space and Rocketry the student has designed a rocket and presented a paper and model describing their invention of a rocket taking into account scientific facts.

In The Development of Communication the student has researched a particular aspect of the written, spoken or technological - communication industry, and written a research paper presented with visual aids

In Architecture the student researched a topic of interest and prepared a report that was presented with a visual model

In The Development of Transportation the student will have researched a particular vehicle of interest and written a a research paper.

In Ecology the student has written a report in response to participating in the National Geographic Kids' Network **Acid Rain™.**

The development of speaking in a variety of ways depending on purpose

The observation of a student's stance in defending his or her own view in class discussions, and the determination to find information about a particular subject.

The obtaining of information and the defense of his or her own views in a case scenario based on factual research

The voluntary sharing of opinions as to the "how and why" of a stock purchase

The presentation of the financial implications of international trade, the transportation routes of the materials and the product, and the world need for employment and trade.

The description of a particular aspect of architecture, and the presentation of a design and the accompanying visual aids to a class for discussion

The participation in an in-house radio station